APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/959,149	10/28/97	LIMPRECHT	R 3382-47280

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EXAMINER	
LAO, S	

ART UNIT	PAPER NUMBER
2755	2

DATE MAILED:

11/26/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

☐ Responsive to communication(s) filed on _____ .

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire ____3____ month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-20* _____ is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-20* _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

NADID A. BANANKHAH
PRIMARY EXAMINER

--- *SEE OFFICE ACTION ON THE FOLLOWING PAGES* ---

DETAILED ACTION

1.   Claims 1-20 are presented for examination.

2.   Applicant recites reference to "Essential Client/Server Survival Guide" on page 6, line 1. Copy of the same is requested by the examiner so that it can be fully considered.

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over author admitted prior art APA (page 1, line 10 - page 5, line 4) in view of Schwartz et al (U S Pat. 5,301,280).

As to claim 1, APA teaches method of enhancing scalability (enhancing scalability) of server applications (server application), comprising:

executing an application component (server application, object) under control of an operating service (the OS inherent to APA), the application component having a state (user's state, object's data/properties) and function code (functions/procedures, member functions) for performing work responsive to a call from a client (client application calls),

destroying the state in response to an indication from the application component that the work is complete (store away user's state at the functions completion, load the state into server's memory only as long as necessary to perform), see page 2, lines 10-27; page 3, lines 3-20.

APA does not teach that the step of destroying is without action by the client.

However, APA teaches the server's/object's lifetime is typically controlled by the client (object is kept in memory until client's reference to the object is released, page 4, lines 4-13).

Schwartz teaches managing resources (client/server connections), wherein the lifetime of a resource (connection) can be controlled by the client (client disconnects the connection) or alternatively controlled by the server without action by the client (server breaks the connection) after the work for the client is completed. See abstract, col. 19, lines 32-35; col. 20, line 60 - col. 21, line 16. Since APA identifies the need for resource management (server memory capability, page 2, lines 1-9) and Schwartz provides a mechanism of resource (management based on capability), it would have been obvious to combine the teachings. It would have been obvious to include the alternative of server control without client action of Schwartz into APA's client control of server's state / lifetime (resource).

As to claim 2, in object-oriented programming, destroying an object's state is typically achieved by releasing reference to the object. Applying this teaching would have been obvious.

As to claim 3, APA teaches resetting the state (load user's state into main memory at start of function, page 2, lines 26-27).

As to claim 4, in an object-oriented programming language such as C++, an object's reference is released by a destructor which is typically placed after all (meaningful) member functions. Execution of the following return activates the destruction of the object (frees memory allocated). Apply this teaching to a server object/component would have been obvious.

5. Claims 5-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Schwartz et al as applied to claim 1 and further in view of Limprecht ("Microsoft Transaction Server").

As to claim 5, note discussion of claim 1 except for (1) server applications being component based, (2) run-time service for executing, and (3) instance creation service

operative, responsive to a request of a client, to return a reference to the application component through the run-time service to the client, whereby the client calls functions of the application component indirectly through the run-time service using the reference to initiate work by the application component.

As to (1)-(3), Limprecht teaches object/component resource management (Microsoft Transaction Server, server application framework), including component based server applications (component based applications, COM/Active X components), run-time service for executing (transaction server executive, run-time services), see sections 2, 3. Although not explicitly discussed by Limprecht, COM technology, which form the basis of the transaction server framework of Limprecht, provides instance creation service (framework, COM class factory) operative, responsive to a request of a client, to return a reference to the application component (object pointer) through the run-time service to the client (framework), whereby the client calls functions of the application component indirectly through the run-time service using the reference to initiate work by the application component (in COM, member functions are provided to client via interface function table / vtable). General teaching of COM architecture may by found in a number of publications such as the series by Orafali, Harkey and Edwards. Since the framework of Limprecht requires resource/component/object management and APA as modified provides one mechanism, it would have been obvious to combine the teachings.

As to claim 6, APA as modified (Limprecht) teaches committing and aborting a transaction (commit or abort specific transaction, page 17, left col., 2nd para.). Limprecht teaches integrating resource management with transaction processing (framework including transaction server executive and resource managers/dispensers), therefore invoking server (resource) destruction in commit/abort processing would have been obvious. Note discussion of claim 4 for a call/return.

As to claim 7, return is typically used to indicate the end of a procedure. Using another explicit indication to signal the end/completion before return statement would be obvious. Note discussion of claim 4 for destroying state on return.

As to claims 8-10, APA as modified (Limprecht) teaches component context (client context, page 14, right col., last para.) associated by the run-time service (framework). In COM architecture, a member function is provided to the client through a component interface. Therefore, interface for indicating completion, interface for commit, interface for abort would have been obvious.

As to claims 11-12, holding a reference and releasing a reference are conventional means for object creation and destruction, such as in a constructor and a destructor. Setting/resetting an object's state is a typical part of a constructor.

As to claim 13, note discussion of claims 1 and 5, and note the equivalence of discarding (claim 13) / destroying (claims 1, 5). Further, APA as modified (Limprecht, COM and framework) teaches

encapsulating function code and a processing state for the work in a component (COM model),

providing a reference (pointer) through an operating service (COM architecture) for a client program to call the function code of the component to initiate processing (member function invocation via interface pointers, see discussion of claim 5).

As to claims 14-17, note discussion of claims 4, 8-10, respectively. Further, APA as modified (Limprecht) teaches integration interface for receiving calls to object/component (transaction server executive). In view of COM architecture, implementing context data with a context object would have been obvious. COM provide an integration interface for receiving client calls (interface function table, vtable).

As to claim 18, it is basically a program product claim of claim 5. Note rejection of claim 5.

As to claims 19-20, note discussion of claims 11-12. The factory mechanism of COM produces component instance and its pointer. When an object is reused, its state is typically reset.
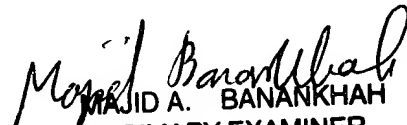

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (703) 305-9657. A voice mail service is also available at this number. The fax number for this Group is (703) 305-9731.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Sue Lao
November 19, 1999

MAJID A. BANANKHAH
PRIMARY EXAMINER